

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A tube guide for a ball screw wherein the ball screw comprises a screw shaft including a spiral-shaped ball rolling groove formed in an outer peripheral surface thereof; a nut including a spiral-shaped ball rolling groove formed in an inner peripheral surface thereof; a plurality of balls disposed in a ball rolling passage formed by the two ball rolling grooves; and, a ball circulation tube forming a ball circulation passage and including a ball scooping portion in an end portion thereof, wherein the plurality of balls is scooped up at the ball scooping portion so as to circulate along an outer surface of the nut, a tube guide insertion hole is formed on the nut at a position where the ball scooping portion is inserted, and the tube guide is used for mounting the ball circulation tube onto the nut, the tube guide comprising:

a top surface;

a bottom surface; and

a side surface connecting the top surface and the bottom surface,

wherein a scooping portion insertion hole is formed so as to penetrate from the top surface to the bottom surface,

the ball scooping portion is inserted into the scooping portion insertion hole,

the side surface has a shape matched to an inner shape of a tube guide insertion hole,

the scooping portion insertion hole has an inner shape matched to an outer shape of the ball scooping portion,

wherein the tube guide is made of resin, and

wherein the tube guide insertion hole is a through hole which penetrates the nut, and

wherein an entire depth of the tube guide insertion hole has an equal cross-section.

~~wherein the tube guide is interposed between the ball scooping portion and the tube guide insertion hole without any clearance between the ball scooping portion and the tube guide insertion hole.~~

2. (previously presented) The tube guide as set forth in claim 1, wherein the side surface is formed in a cylindrical shape.

3. (previously presented) The tube guide as set forth in claim 2, wherein an axial line of the cylindrical shape is set perpendicular to an axial line of the nut.

4. (previously presented) The tube guide as set forth in Claim 1, wherein the scooping portion insertion hole has a ball circulation passage scooping angle set so as to correspond to a lead angle of the ball screw.

5. (previously presented) The tube guide as set forth in Claim 2, wherein the scooping portion insertion hole has a ball circulation passage scooping angle set so as to correspond to a lead angle of the ball screw.

6. (previously presented) The tube guide as set forth in Claim 3, wherein the scooping portion insertion hole has a ball circulation passage scooping angle set so as to correspond to a lead angle of the ball screw.

7. (previously presented) The tube guide as set forth in Claim 1, wherein the tube guide is made of elastic material.

8. (previously presented) The tube guide as set forth in Claim 2, wherein the tube guide is made of elastic material.

9. (previously presented) The tube guide as set forth in Claim 3, wherein the tube guide is made of elastic material.

10. (previously presented) The tube guide as set forth in Claim 6, wherein the tube guide is made of elastic material.

11. (currently amended) A ball screw comprising:

a screw shaft including a spiral-shaped ball rolling groove formed in an outer peripheral surface thereof;

a nut including a spiral-shaped ball rolling groove formed in an inner peripheral surface thereof;

a plurality of balls disposed in a ball rolling passage formed by the two ball rolling grooves;

a ball circulation tube forming a ball circulation passage and including a ball scooping portion in an end portion thereof, the balls being scooped up at the ball scooping portion so as to circulate along an outer surface of the nut ; and

a tube guide via which the ball circulation tube is mounted onto the nut,

wherein the tube guide is made of resin and comprises:

a top surface;

a bottom surface; and

a side surface connecting the top surface and the bottom surface,

wherein a scooping portion insertion hole is formed so as to penetrate from the top surface to the bottom surface,

the ball scooping portion is inserted into the scooping portion insertion hole,

a tube guide insertion hole is formed on the nut at a position where the ball scooping portion is inserted,

the side surface has a shape matched to an inner shape of a tube guide insertion hole,

the scooping portion insertion hole has an inner shape matched to an outer shape of the ball scooping portion, and

wherein the tube guide insertion hole is a through hole which penetrates the nut, and wherein an entire depth of the tube guide insertion hole has an equal cross-section.

~~wherein the tube guide is interposed between the ball scooping portion and the tube guide insertion hole without any clearance between the ball scooping portion and the tube guide insertion hole.~~

12. (previously presented) The ball screw as set forth in claim 11, wherein the inner shape of the tube guide insertion hole is formed in a cylindrical shape:

13. (previously presented) The ball screw as set forth in claim 12, wherein an axial line of the cylindrical shape is set perpendicular to an axial line of the nut.

14. (previously presented) The ball screw as set forth in claim 11, wherein the scooping portion insertion hole has a ball circulation passage scooping angle set so as to correspond to a lead angle of the ball screw .

15. (previously presented) The ball screw as set forth in claim 11, wherein the tube guide is made of elastic material.

16 - 27. (canceled).

28. (previously presented) The tube guide as set forth in claim 1, wherein the top surface is chamfered in a smooth arc manner.

29. (previously presented) The ball screw as set forth in claim 11, wherein the top surface is chamfered in a smooth arc manner.

30 - 31. (canceled).

32. (previously presented): The tube guide as set forth in claim 1, wherein the nut further includes an installation surface on which a lower surface of the ball circulation tube contacts and on which the tube guide insertion hole is formed,

wherein the top surface of the tube guide and the installation surface are disposed on a same plane on both sides of the tube guide.

33. (previously presented): The ball screw as set forth in claim 11, wherein the nut further includes an installation surface on which a lower surface of the ball circulation tube contacts and on which the tube guide insertion hole is formed,

wherein the top surface of the tube guide and the installation surface are disposed on a same plane on both sides of the tube guide.